PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 09/754,823

Filing Date: 01/04/2001

Applicant: ARAI, et al.

Group Art Unit: 1755

Examiner: Unknown

Title: MAGNETIC POWDER AND ISOTROPIC BONDED MAGNET

Attorney Docket: 9319A-000182

Hon. Commissioner of Patents and Trademarks
Washington, D.C. 20231

SUPPLEMENTAL PRELIMINARY AMENDMENT

Sir:

Prior to the examination of this application, please amend it as follows:

IN THE CLAIMS

5. (Amended) The magnetic powder as claimed in claim 1, wherein when the magnetic powder is formed into an isotropic bonded magnet by mixing with a binding resin and then molding it, the absolute value of the irreversible flux loss (initial flux loss) is equal to or less than 6.2%.

6. (Twice Amended) The magnetic powder as claimed in claim 1, wherein said R comprises rare-earth elements mainly containing Nd and/ or Pr.

7. (Twice Amended) The magnetic powder as claimed in claim 1, wherein said R includes Pr and its ratio with respect to the total mass of said R is 5 – 75 %.

8. (Twice Amended) The magnetic powder as claimed in claim 1, wherein said R includes Dy and its ratio with respect to the total mass of said R is equal to or less than 14 %.

9. (Twice Amended) The magnetic powder as claimed in claim 1, wherein the magnetic powder is obtained by quenching the alloy of a molten state.

10. (Twice Amended) The magnetic powder as claimed in claim 1, wherein the magnetic powder is obtained by milling a melt spun ribbon of the alloy which is manufactured by using a cooling roll.

11. (Twice Amended) The magnetic powder as claimed in claim 1, wherein the magnetic powder is subjected to a heat treatment for at least once during the manufacturing process or after its manufacture.

12. (Twice Amended) The magnetic powder as claimed in claim 1, wherein the average particle size of the magnetic powder lies in the range of 0.5 – 150 μm.

17. (Amended)   The isotropic bonded magnet as claimed in claim 13, wherein said magnetic powder is formed of R-TM-B-Nb based alloy (where R is at least one rare-earth element and TM is a transition metal containing iron as a major component thereof).

18. (Twice Amended)   The isotropic bonded magnet as claimed in claim 13, wherein the magnetic powder is composed of an alloy composition represented by $R_x(Fe_{1-y}Co_y)_{100-x-z-w}B_zNb_w$ (where R is at least one kind of rare-earth element, x is 7.1 – 9.9 at%, y is 0 –0.30, z is 4.6 – 6.9 at%, and w is 0.2 – 3.5 at%).

22. (Twice Amended)   The isotropic bonded magnet as claimed in claim 13, wherein the average particle size of the magnetic powder lies in the range of 0.5 – 150 μm.

23. (Twice Amended)   The isotropic bonded magnet as claimed in claim 13, wherein the absolute value of the irreversible flux loss (initial flux loss) is equal to or less than 6.2%.

24. (Twice Amended)   The isotropic bonded magnet as claimed in claim 13, wherein the magnetic powder is constituted from a composite structure having a soft magnetic phase and a hard magnetic phase.

25. (Twice Amended) The isotropic bonded magnet as claimed in claim 13, wherein the isotropic bonded magnet is to be subjected to multipolar magnetization or has already been subjected to multipolar magnetization.

26. (Twice Amended) The isotropic bonded magnet as claimed in claim 13, wherein the isotropic bonded magnet is used for a motor.
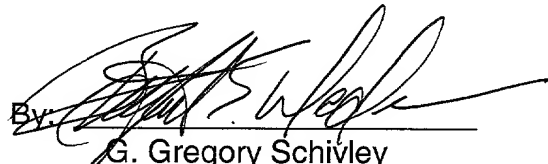
REMARKS

The purpose of this supplemental preliminary amendment is to remove multiple dependent claims from the application.

Favorable consideration of this application is respectfully requested.

Respectfully submitted,

Date: July ___5___, 2001

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5. (Twice Amended) The magnetic powder as claimed in [any one of claims]claim 1 [to 4], wherein when the magnetic powder is formed into an isotropic bonded magnet by mixing with a binding resin and then molding it, the absolute value of the irreversible flux loss (initial flux loss) is equal to or less than 6.2%.

6. (Twice Amended) The magnetic powder as claimed in [any one of claims]claim 1 [to 4], wherein said R comprises rare-earth elements mainly containing Nd and/ or Pr.

7. (Twice Amended) The magnetic powder as claimed in [any one of claims]claim 1 [to 4], wherein said R includes Pr and its ratio with respect to the total mass of said R is 5 – 75 %.

8. (Twice Amended) The magnetic powder as claimed in [any one of claims]claim 1 [to 4], wherein said R includes Dy and its ratio with respect to the total mass of said R is equal to or less than 14 %.

9. (Twice Amended) The magnetic powder as claimed in [any one of claims]claim 1 [to 4], wherein the magnetic powder is obtained by quenching the alloy of a molten state.

10. (Twice Amended) The magnetic powder as claimed in [any one of claims]claim 1 [to 4], wherein the magnetic powder is obtained by milling a melt spun ribbon of the alloy which is manufactured by using a cooling roll.

11. (Twice Amended) The magnetic powder as claimed in [any one of claims]claim 1 [to 4], wherein the magnetic powder is subjected to a heat treatment for at least once during the manufacturing process or after its manufacture.

12. (Twice Amended) The magnetic powder as claimed in [any one of claims]claim 1 [to 4], wherein the average particle size of the magnetic powder lies in the range of 0.5 – 150 μm.

17. (Twice Amended) The isotropic bonded magnet as claimed in [any one of claims]claim 13 [to 16], wherein said magnetic powder is formed of R-TM-B-Nb based alloy (where R is at least one rare-earth element and TM is a transition metal containing iron as a major component thereof).

18. (Twice Amended) The isotropic bonded magnet as claimed in [any one of claims]claim 13 [to 16], wherein the magnetic powder is composed of an alloy composition represented by $R_x(Fe_{1-y}Co_y)_{100-x-z-w}B_zNb_w$ (where R is at least one kind of rare-earth element, x is 7.1 – 9.9 at%, y is 0 –0.30, z is 4.6 – 6.9 at%, and w is 0.2 – 3.5 at%).

22. (Twice Amended) The isotropic bonded magnet as claimed in [any one of claims]claim 13 [to 16], wherein the average particle size of the magnetic powder lies in the range of 0.5 – 150 μm.

23. (Twice Amended) The isotropic bonded magnet as claimed in [any one of claims]claim 13 [to 16], wherein the absolute value of the irreversible flux loss (initial flux loss) is equal to or less than 6.2%.

24. (Twice Amended) The isotropic bonded magnet as claimed in [any one of claims]claim 13 [to 16], wherein the magnetic powder is constituted from a composite structure having a soft magnetic phase and a hard magnetic phase.

25. (Twice Amended) The isotropic bonded magnet as claimed in [any one of claims]claim 13 [to 16], wherein the isotropic bonded magnet is to be subjected to multipolar magnetization or has already been subjected to multipolar magnetization.

26. (Twice Amended) The isotropic bonded magnet as claimed in [any one of claims]claim 13 [to 16], wherein the isotropic bonded magnet is used for a motor.